



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,585	11/21/2003	Tim Sievers	04087-P0001A	3272

24126 7590 04/04/2006

ST. ONGE STEWARD JOHNSTON & REENS, LLC
986 BEDFORD STREET
STAMFORD, CT 06905-5619

EXAMINER

DANIELS, MATTHEW J

ART UNIT	PAPER NUMBER
----------	--------------

1732

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/719,585

Applicant(s)

SIEVERS ET AL.

Examiner

Matthew J. Daniels

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. In the reply filed 11 January 2006, Claim 6 was cancelled.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on application DE 101 24 795.8, filed on 21 May 2001. It is noted, however, that applicant has not filed a certified copy of the German application as required by 35 U.S.C. 119(b).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. **Claims 1-5** are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,2 and 6-16 of copending Application No. 10/298,412. Although the conflicting claims are not identical, they are not patentably distinct from each other because for the following reasons:

Art Unit: 1732

Instant Claim 1 and Claims 1, 2, and 6-8 of the '412 application

Instant Claim 1 and Claim 1 of the '412 application are each drawn to a method of producing a layered workpiece by successive compaction of horizontal layers and subjecting vertical sidewalls to mechanical finishing. While Claim 1 of the '412 application is silent to electromagnetic or particle radiation as the means for compaction, this aspect is subsequently claimed in Claim 2 of that application. Thus, the instant claim 1 is obvious over the subject matter of the '412 application.

Additionally, the instant claim 1 is drawn to the work piece being "surrounded by powdered starting material during its production..." The portion drawn to being surrounded would have been obvious over Claims 6-8 of the '412 application which are drawn to mechanical finishing in the surrounding powder starting material. Additionally, peripheral grinding claimed in Claims 6-8 of the instant application would have rendered obvious the instant limitation of Claim 1 drawn to mechanical finishing.

Instant Claims 2-5 and Claims 9-16 of the '412 application

Instant Claims 2-5 are drawn to finishing a plurality of layers after they have been formed by mechanical finishing (See Claim 1). Claim 9 of the '412 application is drawn to finishing at least two of the layers formed, and Claims 10-16 of that application are drawn to the grinding being a peripheral process, which is mechanical finishing. The subject matter of Claims 2-5 is obvious over these claims of the '412 application because of their teaching to grind multiple layers at once by a peripheral grinding process.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Additionally, it should be noted that the 10/298,412 application was considered as prior art under 35 USC 102(e). However, because the inventive entity is the same, no rejection has been made.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Benda (USPN 5427733) in view of Prinz (USPN 5207371). **As to Claim 1**, Benda teaches a method for producing a work piece by the successive compacting by electromagnetic radiation of powdered starting material in horizontal layers (3:66-4:40), each layer consisting of a horizontal surface and two substantially vertical lateral faces which form the basis for a possible subsequent layer (Fig. 2, Item 63 and 1:45-57). The part being surrounded by powder during fabrication would be an inherent aspect of the selective laser sintering process taught by Benda. Benda is silent to the mechanical finishing aspects sought in the instant claims. However, they would have been prima facie obvious over Prinz, who teaches also teaches a method for producing a work piece by successive compacting of starting material applied in layers so that each trace comprises two substantially vertical lateral faces and one horizontal upper face which forms the base for a possible subsequent layer, and mechanical finishing at least one of the vertical sidewalls after the

Art Unit: 1732

compacting (See 4:28-68 and 5:65-6:14). Additionally, Prinz teaches mechanical finishing of the sidewalls after completing compaction of one or a multiple number of layers (See Abstract, lines 9-12). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Prinz into that of Benda in order to permit the fabrication of complete functional assemblies containing mating parts (Prinz, 6:14-18) having any desired configuration or contour (Prinz, 6:5-8) including undercuts and irregular shapes (Prinz, 3:30-31), each layer being trimmed to the exact desired thickness (Prinz, 6:1). **As to Claims 2-5**, Prinz's teaching that the layers "are milled to a final shape either after each layer is formed or after all layers have been made" (See Abstract, lines 9-12), renders obvious the claimed subject matter to depositing any number of layers followed by finishing. In particular, Prinz's teaching to finish after the completion of the article renders obvious the claims to at least one further layer (Claim 2) and several layers finished simultaneously (Claim 3). The entire article of Prinz is interpreted to be a "layer package" (Claim 4), See Item 2 in Prinz's Figs. 4-7, and Prinz clearly teaches that finishing can be performed after all layers are deposited, which would be after the generation of an nth layer package (Claim 5).

Response to Arguments

6. Applicant's arguments filed 11 January 2006 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

a) Applicant submits that the '412 application fails to disclose or teach the element of mechanical finishing of a vertical side wall of an nth layer after the generation of an n+x layer only.

Art Unit: 1732

b) Benda does not teach (i) that at least one of the two vertical sidewalls is subject to mechanical finishing subsequent to the compacting of the powdered starting material that has been applied horizontally in layers, (ii) that the work piece to be formed is surrounded by powdered starting material during its production, and (iii) that the mechanical finishing of a vertical side wall is performed after the generation of an $n+x^{\text{th}}$ layer only.

c) Prinz fails to disclose or teach at least (ii) that the work piece to be formed is surrounded by powdered starting material during its production, and (iii) that the mechanical finishing of a vertical side wall is performed after the generation of an $n+x^{\text{th}}$ layer only.

d) In particular, the mechanical finishing aspect of Prinz is applied only on the last manufacturing layer, but not on several layers as required by element (iii)

e) It is clear that the mechanical finishing process of Prinz is not to be performed while the piece is surrounded by starting material. It is very unique for this invention that the mechanical finishing is performed while the piece is surrounded. Because the milling tools are small, there are no disturbances in the surrounding material, providing a finishing process more efficient and productive than the prior art method for finishing multiple layers.

f) There is no motivation or suggestion to make the combination.

7. The arguments appear to be on the following grounds:

a) The Examiner respectfully disagrees that the methods claimed in the copending applications are unobvious over one another. The Applicant's remarks appear to be drawn to the step of forming multiple layers of material before finishing the first of those layers. However, the

Art Unit: 1732

Examiner submits that this aspect must necessarily be included within the scope of Claim 1 of the copending application in order to be included in Claim 9 of the conflicting application.

b, c) The Examiner submits that the reply does not appear to mention or address the substance of the rejections set forth in the previous action. Benda teaches (i) application and melting of layers of material. Prinz teaches (i) finishing at least one of the sidewalls after application of layers, (ii) that the work piece to be formed is surrounded by powdered starting material during its production (5:3-8, for example), and (iii) mechanical finishing after multiple layers.

d) The arguments do not appear to be commensurate with the scope of the claim language. The Applicant's remarks appear to suggest that the $n + x^{\text{th}}$ is some layer prior to the last layer. However, no mention of the last layer is made in the claims. Because finishing after all layers includes an $n + x^{\text{th}}$ layer, the limitation is met by Prinz. No evidence has been presented which shows any benefits to finishing prior to the last layer, but after the first layer. Moreover, this limitation is not claimed.

e) The combination of Prinz's complementary material, which may be metal and may be in powder form, is placed adjacent each layer after it is formed, and Prinz teaches that this material may be milled after multiple layers are formed. Powdered metals are one option for the complementary material. See the following portions of Prinz's method:

Prinz, Column 3, lines 50-54

normal to a center line through the article. Complementary material is placed adjacent each layer after it is formed. The layers are milled to a final dimension either after all layers have been formed or individually before a successive layer is formed thereon. Hereinafter, we

Prinz, Column 5, lines 35-53

Upon completion of the process, one will have a 35
block of material. Because we have deposited a comple-
mentary material 6 with the deposition material, we are
able to create intricate shapes and parts having undercut
portions. For the particular object of FIG. 1, the comple-
mentary material 6 in each layer supports the ends of 40
the welded material above that layer. We prefer that the
complementary material have either very high electrical
conductivity, such as copper, or very low electrical
conductivity, such as ceramics. These types of material
will not generate or retain significant amounts of heat. 45
We also prefer to use a brittle material such as most
ceramics. If that type of material is used the comple-
mentary material 6 can be easily broken away from the
object 1 by vibration, ultrasonic vibration and heating
of the article to cause thermal expansion of the article. 50
We have found that if the article is to be fabricated in
steel or other metal alloy most ceramics, copper and
copper alloys make a suitable complementary material.

The Examiner submits that Prinz does not appear to teach removing the complementary material prior to the milling of multiple layers, moreover, doing so would only amount to a change in the order of process steps disclosed in the prior art. No unexpected results are asserted by the Applicant's remarks to be attributed to the milling while the complementary material is in place.

f) The Applicant's remarks do not address or particularly argue the motivation provided, which is still believed to be valid. Prinz teaches a method for producing complicated parts having exact and precise dimensions, and for these reasons, as well as those set forth in the body of the rejection, the Examiner submits that one would have been motivated to make the combination.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1732

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 7:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJD 3/26/06

MJD


MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER